

## Professor Botts and His Airship

In the winter of the year 1900 a man arrived in the San Francisco bay region with the intention of producing and flying a heavier than air aircraft. This man was Robert H. Botts, self styled Professor Botts. He selected for his experiment that area where the city of Richmond, California now stands. This was located across the San Francisco Bay and about 8 miles north and somewhat east of the city of San Francisco. The region where Richmond later developed is an alluvial plain lying west of the north-south line of the Berkeley Hills and about 6 miles north of the city of Berkeley. It parallels the Berkeley Hills and about 4 miles to the west is a low range of hills projecting out into San Francisco Bay. These were originally called the Potrero Hills but locally now they are known as the Point Richmond Hills. Originally, these hills were separated from the Richmond Plain by a salt marsh nearly a mile in width. This was completely under water at high tide and the Potrero Hills then became an island.

In about 1897, the Santa Fe Railroad decided to make this area its west coast terminal with a ferry service across the bay to San Francisco. By 1900 they had completed their tracks across the plain and the salt marsh; they had tunneled through the Point Richmond Hills, established their ferry service and were in full operation. With the obstruction caused by the track, the salt marsh soon filled in with silt. Prior to this, there had only been a few settlers in this area and the nearest town was the little Pueblo of San Pablo, a few miles to the north. This had been established by the Castro family in about 1825 on an old Spanish grant. With the advent of the railroad and the availability of a relatively deep water frontage, the Standard Oil Company of California chose this area for their west coast refinery. This they build north of the tracks on the alluvium east of the Point Richmond Hills. By 1901, construction was well started and many workers were drawn into the area. The little Santa Fe town of East Yard rapidly blossomed into the boom town of Point Richmond around the new refinery construction.

No doubt the location of the railroad and the easily available space contributed to Botts decision to use the Richmond area to start his aerial experiments. The relative isolation may also have been attractive. Peculiarly he selected the top of the highest hill in the southern half of the Point Richmond range as the site of his workshop. This was a rounded, rather barren and windswept hill about 300 feet high known as Nicholl's Nob, named after John Nicholl, a pioneer landowner in the area. Botts seemed to have an idea that aircraft were better launched from points of higher elevation, since elsewhere he mentions launching from high peaks. The Santa Fe had constructed a water reservoir on a high bench just north of Nicholl's Nob and this probably facilitated his construction of an access route up the relatively gentle slope to the top of the hill where his plane was to be built.

The locality was increasing rapidly in population due to job opportunities with the Santa Fe and the Standard Oil Company, so Botts was probably able to hire help with he could afford it. He at once formed the "World Aerial Navigation and Construction Company" and proceeded to sell stock. This, at least, partly defrayed his expenses although it is alleged that the stock sold for only one to five cents a share. There seems to have been

quite a lot of local interest generated in this project. As would be expected there was much reaction both pro and con, some of it derisive.

At first, Botts erected a barn-like structure ancestral to later aeroplane hangers and went to work to construct his plane. It must have been difficult with little but hand labor available. Some of the items, especially the engine, obviously had to have been produced elsewhere and brought in prior to the assembly of the plane because very little private facilities for this type of construction were available locally.

Botts apparently had been working on, and giving thought to, aerial navigation for many years before coming to Richmond. He was about 43 years old when he arrived here and there is evidence that he had been working on this and other projects for at least ten years. Susan D. Cole researched Botts' life as thoroughly as possible for her amazing little booklet entitled "Richmond, Windows of the Past". She found that he had been born in Indiana on August 22, 1857 and moved to Paso Robles, California in childhood after the death of his parents. He grew up there and was known to have been inventive. Apparently his name had originally been Barnet Botts but he later changed it to Professor Robert H. Botts before coming to Richmond.

The plane itself was an odd looking structure by modern standards. It consisted of a round or oval sheet of canvas or some similar substance held in a light frame and seemingly about 25 or 30 feet in diameter. There was a centrally placed double propeller with blades horizontally placed as in a helicopter. These were said to rotate in opposite directions for ascent and descent. In addition, in front and back of the plane there were separate circular wheel-like propellers for forward and backward flying. These consisted of circular rims with multiple vane-like propeller blades radially placed between the rotating shaft and a wheel-like rim. Centrally, under the propellers for vertical lift was located the engine and presumably the fuel tank. Just behind this was a sling-like seat for the pilot. There was also a rod ending in a fan-like structure running aft from the pilot. It was moveable and seemingly served as a rudder and/or aileron. The craft on the ground seemed to be supported on a wide tripod structure by three rounded objects which did not seem to be wheels. Apparently takeoffs and landings were expected to be vertical so that wheels were not needed.

One of the most interesting features of this unusual aircraft was its engine. This was a very ingenious and compact steam engine. My father, who was a fine mechanic, a neighbor of Botts and knew him quite well said that in his estimation this engine was by far the most ingenious part of the entire Botts assembly. It was very small, constructed of aluminum and of very light weight. Except for the rise, at this time of the more efficient internal combustion engine, this may have become a very fine power source for small machinery and very practical. Mr. Botts had apparently been issued two patents from the U.S. Patent Office for this steam engine and its boiler. They are listed as U.S. patents #685,583 and #697,598. Botts claimed that his boiler was strong enough to hold pressures up to 400 pounds per square inch. My father disputed this and suggested a controlled test of the pressure in the boiler house of the local Standard Oil Company refinery. This test was never done. It is said that the engine, itself, was tested at the local

Santa Fe shops. I do not know the results of this test if it was done. The engine, however, seems to have been an amazingly light and efficient little steam engine. How the power was delivered to the propellers and what device was used to shift the power from the vertical to the horizontal propellers is unclear to me. Also the exact type of fuel and the facilities for carrying the fuel is unclear.

I suspect that the aircraft constructed in Richmond was meant as an experimental model to test its feasibility and if successful it was to be followed by larger, more powerful models. Mr. Botts had very grandiose ideas about his invention. He was to fly to the North Pole, to fly around the world and to form extensive airlines. The mechanism described above was far from able to perform these feats. There is little evidence that it could carry a fuel supply for any extended flight even without considering cargo and there was very little protection for the pilot. No doubt his dreams were much larger. He seems to have envisioned two planes each with a 4 man crew and with fuel supply and cargo. Also, there was mentioned the addition of a Marconi wireless apparatus then invented only a few years before.

The Botts plane was constructed but Botts' dreams came to an abrupt end. Probably sometime in 1903 a heavy windstorm swept the summit of his hill. This storm blew his airplane and other structures completely off the hill and far down the north east slope, destroying it utterly. Botts seemed to have been completely crushed mentally by this misfortune and he left Richmond and never returned. No further work was ever recorded on the inventions. According to Susan Cole, he returned to his family in Paso Robles, California and lived out the rest of his life quietly. He died there on August 29, 1918. Apparently he did not attempt further mechanical inventions.

In spite of the impracticability of this aircraft, we feel that its history should be preserved along with that of the many other visionaries who were working on comparable schemes during those early days of the dreams of flight. Some were less practical than his and his ideas were greatly different from most of the others. In the course of scientific investigation the recording of negative results are just as important as positive ones, since they prevent useless repetition. All were ingenious to a point and success blocked by technical ignorance.

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